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|---|-------------|----------------------|---------------------|------------------|
| 10/029,199  | 12/28/2001  | Jae Wook Song        | HI-0065             | 5395             |
| 34610   | 7590        | 11/01/2005           | EXAMINER            |                  |
| FLESHNER & KIM, LLP<br>P.O. BOX 221200<br>CHANTILLY, VA 20153 |             |                      | MEW, KEVIN D        |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2664                |                  |

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/029,199

Applicant(s)

SONG, JAE WOOK

Examiner

Kevin Mew

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8 and 11 is/are rejected.
- 7) ☒ Claim(s) 1-7, 9-10, 12-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*Detailed Action*

*Claim Objections*

1. Claims 1, 4-6, 12-17 are objected to because of the following informalities:

In claim 1, line 16, the limitation “from the storage” should be rewritten as “from the energy storage.”

In claim 4, line 2, the term “ $\alpha$ ” is not defined.

In claim 5, line 2, the term “ $\alpha$ ” is not defined.

In claim 6, line 1, the term “ $\alpha$ ” is not defined.

In claim 11, line 1, the term “claim 19” should be rewritten as “claim 9” instead.

In claim 11, line 3, the limitation “the multiplexer” is not cited in claim 8.

In claim 12, line 4, the term “ $\alpha$ ” is not defined.

In claim 13, line 4, the term “ $\alpha$ ” is not defined.

In claim 13, line 5, the term “(-)” should be removed or rewritten as “or decreased.”

In claim 14, line 4, the term “ $\alpha$ ” is not defined.

In claim 14, line 5, the term “(+)” should be removed or rewritten as “or increased” instead.

In claim 15, line 3, the term “multiplex” should be rewritten as “multiplexer” instead.

In claim 16, line 3, the term “+, - timing information” should be rewritten as “increasing or decreasing timing information” instead.

In claim 16, line 4, it is not clear as to what the term “each case” refers to.

In claim 17, line 2, the term “+, - timing information” should be rewritten as “increasing or decreasing timing information” instead. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Sarkar (US Publication 2002/0057664).

Regarding claim 8, Sarkar discloses a method for synchronizing and detecting code group/number of an asynchronous mobile communication system (achieving synchronization with a received signal in an asynchronous CDMA system, paragraph 0002) having an initial cell search operation, the method comprising the steps of:

synchronizing a slot at a time of system booting (synchronizing to the slot timing of the received signal, paragraph 0048);

detecting an energy (detecting primary synchronization code PSC best estimate energy, paragraph 0071) and a time offset (and slot timing offset) based on the designated position of a slot timing (depending on the position of the slot timing offset, paragraph 0071); and

detecting frame synchronization and a code group (detecting PSC synchronization for a full frame period and detecting the secondary synchronization code information SSC, paragraphs 0054, 0071, 0076) using the detected energy and information (using the detected PSC best estimate energy and the slot timing offset, paragraph 0071).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkar (US Publication 2002/0057664).

Regarding claim 11, Sarkar discloses the method of claim 8 or claim 9, wherein the code number detection (SSC detection) is accomplished by using the slew values through the time offset detection (is based on timing offset detection corresponding to the PSC best estimate energy, paragraphs 0054, 0071, 0076), except fails to disclose the outputted values from the multiplexer. However, the prior art of Sarkar discloses a synchronization method wherein a multiplexer is used to provide SSC sequences to one of sixteen possible SSC inner code detectors (paragraphs 0010, 0011, 0021 and Fig. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the synchronization method of Sarkar with the teaching of Sarkar's prior art in using a multiplexer to supply SSC sequences. The motivation to do so is to use SSC sequences to identify the frame timing of a base station and to provide a group identification of a plurality of timing offsets of a spreading code such as Gold code.

*Allowable Subject Matter*

4. Claims 9-10, 12-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the claim objections under the Claim Objections paragraph, set forth in this Office action, can be overcome.

Claims 1-3, 4-7 would be allowable if rewritten to overcome the claim objections under Claim Objections paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 1, an apparatus for synchronizing frame and detecting code group/number, comprising:

an on time despreader for despreading a receiving input by having a slot timing position designated after slot synchronization as a sampling point;

an early time and a late time despreaders for despreading a sampling point that is earlier or later than the sampling point of the on time despreader;

a slew detector for detecting a time offset using energy of a despread signal outputted from the despreaders;

a slew storage connected to the slew detector for storing an outputted slew value at the result of the time offset detection based on the energy of the outputted despread signal from the despreaders;

a multiplexer for selecting one out of outputted values from the on time, the late time and the early time despreaders according to the output of the slew detector; an energy storage for storing outputted values of the multiplexer; and

a code group detector for detecting frame synchronization and code groups using the outputted values from the energy storage and from the slew storage, respectively.

In claim 9, the method of claim 8, wherein the step of detecting the time offset further comprises the sub-steps of:

dispredding for having the designated position of the slot timing as an on time sampling point through the slot synchronization;

early time dispredding for having an earlier sampling point than the on time sampling point; late time dispredding for having a later sampling point than the on time sampling point;

controlling a multiplexer to select an energy by comparing outputted energies from each despreader;

storing slew values through the time offset detection by comparing outputted energies from each despreader; and

storing the outputted energies from the multiplexer.

*Conclusion*


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KDM  
Art Unit 2664



WELLINGTON CHIN  
SUPERVISORY PATENT EXAMINER